

IN THE CLAIMS:

Please cancel claim 4 without prejudice, and amend the claims as follows:

1. (Currently Amended) A method for controlling an inspection of a surface of a substrate in a processing system, comprising:

receiving process data readings from at least one optical inspection system, wherein the data readings comprise optical signal signature information indicative of a topographical condition on the substrate surface inspected by the at least one optical inspection system; and

determining whether the process data readings exceed a predetermined value;
and

if the data readings exceed the predetermined value, determining that an unacceptable topographical condition exists on the substrate ~~processing the process data readings to determine a subsequent substrate handling step.~~

2. (Currently Amended) The method of claim 1, further comprising ~~wherein processing the process data readings to determine the subsequent substrate handling step comprises:~~

~~determining whether the process data readings exceed a predetermined value;~~
~~if the data readings exceed the predetermined value, determining that an unacceptable topographical condition exists on the substrate; and~~

transferring the substrate to an inspection platform, if it is determined that an unacceptable topographical condition exists on the substrate.

3. (Original) The method of claim 1, wherein the optical signal signature information comprises at least one of substrate reflectivity information, specular information, spectral information, substrate defect information, substrate damage information, particle contamination information, alphanumeric character information, non-uniform plasma deposition, and any combination thereof.

4. (Cancelled)

5. (Currently Amended) A method for controlling an inspection of a surface of a substrate in a processing system, comprising:

receiving process data readings from at least one optical inspection system, wherein the data readings comprise optical signal signature information indicative of a topographical condition on the substrate surface inspected by the at least one optical inspection system; and

processing the process data readings to determine ~~The method of claim 1,~~
~~wherein the subsequent process step is a process termination step.~~

6. (Currently Amended) The method of claim 1, A method for controlling an inspection of a surface of a substrate in a processing system, further comprising:

~~receiving, from at least one of the plurality of optical inspection systems, process data readings comprising optical signal signature information indicative of a topographical condition on a substrate inspected by the at least one of the optical inspection systems; and~~

~~determining the location of the substrate in the processing system to determine a routing sequence for the substrate, if it is determined that an unacceptable topographical condition exists on the substrate.~~

7. (Previously Presented) A substrate process inspection system, comprising:

a plurality of optical inspection systems, each being configured to perform an optical inspection process at a first degree of optical resolution and each comprising a transmitter unit and a receiver unit;

an inspection platform configured to perform an optical inspection process at a second degree of optical resolution; and

a controller system connected to the plurality of optical inspection systems and the inspection platform and configured to:

(i) process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the plurality of optical inspection systems; and

(ii) in response to the topographical condition, cause execution of one of a plurality of subsequent substrate handling steps, wherein a first substrate handling step comprises transferring the substrate to the inspection platform for further optical inspection.

8. (Original) The system of claim 7, wherein each of the optical inspection systems is disposed on a processing system along a transfer path of the substrate.

9. (Original) The system of claim 7, wherein the receiver unit comprises at least one of a charge-coupled device (CCD) camera and a spectrometer.

10. (Original) The system of claim 7, further comprising an input unit for inputting control information utilized to operate the controller system.

11. (Original) The system of claim 7, wherein the controller system is configured to cause execution of the first substrate handling step by:

determining whether optical inspection data collected by at least one of the plurality of optical inspection systems exceed a predetermined value; and if so, determining that an unacceptable substrate process condition exists.

12. (Original) The system of claim 11, wherein the optical inspection data comprises substrate reflectivity information, specular information, spectral information, substrate defect information, substrate damage information, particle contamination information, alphanumeric character information, non-uniform plasma deposition, and any combination thereof.

13. (Currently Amended) A substrate process inspection system, comprising:

a plurality of optical inspection systems, each being configured to perform an optical inspection process at a first degree of optical resolution and each comprising a transmitter unit and a receiver unit;

an inspection platform configured to perform an optical inspection process at a second degree of optical resolution; and

a controller system connected to the plurality of optical inspection systems and the inspection platform and configured to:

(i) process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the plurality of optical inspection systems;

(ii) determine whether optical inspection data collected by at least one of the plurality of optical inspection systems exceed a predetermined value;

(iii) if so, determine that an unacceptable substrate process condition exists; and

(iv) ~~The system of claim 11, wherein~~ if the unacceptable substrate process condition exists, ~~the controller system is configured to~~ initiate a system shut down sequence.

14. (Previously Presented) A processing system, comprising a cluster tool and an optical inspection system comprising:

(a) a plurality of optical inspection systems, each comprising a transmitter unit and a receiver unit, each being configured to perform an optical inspection process at a first degree of optical resolution, and each being disposed at different locations on the cluster tool;

(b) an inspection platform connected to the cluster tool configured to perform an optical inspection process at a second degree of optical resolution;

(c) a controller system connected to the plurality of optical inspection systems and the inspection platform and configured to:

- (i) process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the plurality of optical inspection systems; and

- (ii) in response to the topographical condition, cause execution of one of a plurality of subsequent substrate handling steps, wherein a first substrate handling step comprises transferring the substrate to the inspection platform for further optical inspection; and

- (d) an input device configured to allow operation of the controller by an operator.

15. (Previously Presented) A processing system, comprising a cluster tool and an optical inspection system comprising:

- (a) a plurality of optical inspection systems, each comprising a transmitter unit and a receiver unit, each being configured to perform an optical inspection process at a first degree of optical resolution, and each being disposed at different locations on the cluster tool;

- (b) an inspection platform connected to the cluster tool configured to perform an optical inspection process at a second degree of optical resolution;

- (c) a controller system connected to the plurality of optical inspection systems and the inspection platform and configured to:

- (i) process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the plurality of optical inspection systems; and

- (ii) in response to the topographical condition, cause execution of one of a plurality of subsequent substrate handling steps, wherein a first substrate handling step comprises transferring the substrate to the inspection platform for further optical inspection; and

- (d) an input device configured to allow operation of the controller by an operator; and

(e) wherein the cluster tool comprises a transfer chamber and a processing chamber connected to the transfer chamber and wherein at least one of the plurality of optical inspection systems is disposed on the transfer chamber and at least one of the plurality of optical inspection systems is disposed on the processing chamber.

16. (Original) The system of claim 14, wherein each of the optical inspection systems is disposed on a processing system along a transfer path of the substrate.

17. (Original) The system of claim 14, wherein the receiver unit comprises at least one of a charge-coupled device (CCD) camera and a spectrometer.

18. (Original) The system of claim 14, further comprising an input unit for inputting control information utilized to operate the controller system.

19. (Original) The system of claim 14, wherein the controller system is configured to cause execution of the first substrate handling step by:

determining whether optical inspection data collected by at least one of the plurality of optical inspection systems exceed a predetermined value; and

if so, determining that an unacceptable substrate process condition exists.

20. (Original) The system of claim 19, wherein the optical inspection data comprises substrate reflectivity information, specular information, spectral information, substrate defect information, substrate damage information, particle contamination information, alphanumeric character information, non-uniform plasma deposition, and any combination thereof.

21. (Currently Amended) A processing system, comprising a cluster tool and an optical inspection system comprising:

(a) a plurality of optical inspection systems, each comprising a transmitter unit and a receiver unit, each being configured to perform an optical inspection process at a

first degree of optical resolution, and each being disposed at different locations on the cluster tool;

(b) an inspection platform connected to the cluster tool configured to perform an optical inspection process at a second degree of optical resolution;

(c) a controller system connected to the plurality of optical inspection systems and the inspection platform and configured to:

(i) process optical signal information indicative of a topographical condition on a substrate inspected by at least one of the plurality of optical inspection systems;

ii) determine whether optical inspection data collected by at least one of the plurality of optical inspection systems exceed a predetermined value;

(iii) if so, determine that an unacceptable substrate process condition exists; and ~~The system of claim 19, wherein~~

(iv) if the unacceptable substrate process condition exists, the controller system is configured to execute a shut down sequence to remove the substrate from the processing system; and

(d) an input device configured to allow operation of the controller by an operator.